

**STATE FOREST LAND
ENVIRONMENTAL CHECKLIST**

Purpose of Checklist:

The State Environmental Policy Act (SEPA), chapter 43.21C RCW, requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. An environmental impact statement (EIS) must be prepared for all proposals with probable significant adverse impacts on the quality of the environment. The purpose of this checklist is to provide information to help you and the agency identify impacts from your proposal (and to reduce or avoid impacts from the proposal, if it can be done) and to help the agency decide whether an EIS is required.

Instructions for Applicants:

This environmental checklist asks you to describe some basic information about your proposal. Governmental agencies use this checklist to determine whether the environmental impacts of your proposal are significant, requiring preparation of an EIS. Answer the questions briefly, with the most precise information known, or give the best description you can. *Questions in italics are supplemental to Ecology's standard environmental checklist. They have been added by the DNR to assist in the review of state forest land proposals. Adjacency and landscape/watershed-administrative-unit (WAU) maps for this proposal are available on the DNR internet website at <http://www.dnr.wa.gov> under "SEPA Center."* These maps may also be reviewed at the DNR regional office responsible for the proposal. This checklist is to be used for SEPA evaluation of state forest land activities.

You must answer each question accurately and carefully, to the best of your knowledge. In most cases, you should be able to answer the questions from your own observations or project plans without the need to hire experts. If you really do not know the answer, or if a question does not apply to your proposal, write "do not know" or "does not apply." Complete answers to the questions now may avoid unnecessary delays later. *All of the questions are intended to address the complete proposal as described by your response to question A-11. The proposal acres in question A-11 may cover a larger area than the forest practice application acres, or the actual timber sale acres.*

Some questions ask about governmental regulations, such as zoning, shoreline, and landmark designations. Answer these questions if you can. If you have problems, the governmental agencies can assist you.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Use of checklist for nonproject proposals:

Complete this checklist for nonproject proposals, even though questions may be answered "does not apply." IN ADDITION, complete the SUPPLEMENTAL SHEET FOR NON PROJECT ACTIONS (part D).

For nonproject actions, the references in the checklist to the words "project," "applicant," and "property or site" should be read as "proposal," "proposer" and "affected geographic area," respectively.

A. BACKGROUND

1. Name of proposed project, if applicable:

Timber Sale Name: **Endurance**

Agreement #: **30-084599**

2. *Name of applicant:* **Washington State Department of Natural Resources**

3. Address and phone number of applicant and contact person:

**Marcus Johns
Pacific Cascade Region
601 Bond Road
PO Box 280
Castle Rock, WA 98611-0280**

4. Date checklist prepared: **May 20th, 2009**

5. Agency requesting checklist: **Washington State Department of Natural Resources**

6. Proposed timing or schedule (including phasing, if applicable):

- a. *Auction Date:* **03/25/2010**
b. *Planned contract end date (but may be extended):* **10/31/2011**
c. *Phasing:* **None**

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

Timber Sale

- a. *Site preparation:*

Slash will be piled and spread to ensure sufficient plantable spots and the site will be aerially sprayed to reduce initial competing vegetation.

- b. *Regeneration Method:*

Units 1, 2 and 3 will be hand planted with Douglas-fir and western red cedar seedlings to meet or exceed the minimum Forest Practices' regulations. Some natural regeneration is expected.

c. *Vegetation Management:*

Vegetation management needs will be assessed from plantation ages 3 to 8. Vegetation control activities will occur as needed.

d. *Thinning:*

Pre-commercial thinning needs will be assessed at approximately 7-15 years of age. Commercial thinning potential will be assessed at approximately 25 years of age.

Roads:

Roads remaining at the termination of the sale will be used for future forest management activities. Road maintenance and periodic ditch and culvert cleanout will occur as necessary.

Rock Pits and/or Sale:

The Vantage Quarry located in Section 22 of Township 16 North, Range 04 West of W.M. will be used for future road construction activities associated with forest management operations.

Other:

Firewood salvage may occur after harvest activities.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

☒ 303 (d) – listed water body in WAU: ☒ temp ☐ sediment ☐ completed TMDL (total maximum daily load): In the Upper Chehalis/Cedar Creek WAU, 303(d) waters were identified for both temperature and TMDL from data taken in 1998. The map dated 2008 provided by DOE at their web site (<http://apps.ecy.wa.gov/wqawa/viewer.htm>) no longer identifies the streams as 303(d) listed for the Chehalis/Cedar Creek WAU.

☐ Landscape plan:

☐ Watershed analysis:

☐ Interdisciplinary team (ID Team) report:

☒ Road design plan: Available at the Pacific Cascade Region office.

☐ Wildlife report:

☐ Geotechnical report:

☐ Other specialist report(s):

☐ Memorandum of understanding (sportsmen's groups, neighborhood associations, tribes, etc.):

☒ Rock pit plan: Available at Pacific Cascade Region Office.

☒ Other: Murrelet habitat maps, Forest Practices Activity Maps, WAU maps for rain-on-snow areas, Policy for Sustainable Forests (PSF, December, 2006), State Soil Survey, DNR GIS databases, Washington State Department of Natural Resources Habitat Conservation Plan (HCP) dated September 1997, HCP Checklist, Weighted Old Growth Habitat Index (WOGHI), Slope Stability Checklist, ESA listed Salmonid Species Map from Forest Practices, dated 1999. Planning and Tracking Special Concerns Report and associated maps and RMAP. Available at Pacific Cascade Region Office.

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

None known.

10. List any government approvals or permits that will be needed for your proposal, if known.

☒ HPA 103081-1 ☒ Burning permit (if landing piles are burned) ☐ Shoreline permit ☒ Incidental take permit 1168 and PRT B 812521 ☒ FPA # 2920302 ☐ Other:

11. Give brief, complete description of our proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include specific information on project description.)

a. *Complete proposal description:*

This proposal is a variable retention timber harvest that will occur under the guidelines of the DNR State Lands HCP and the Policies for Sustainable Forests. The proposal includes the following elements:

- RMZ's
- Forested Wetland less than ¼ acre
- Leave Trees
- Road Construction

Unit	Proposal Acres	RMZ/WMZ Acres	Unstable Slope Acres	Existing Road Acres	Sale Acres	Leave Tree Acres	Harvest Acres
<i>name</i>	<i>gross</i>			<i>within unit</i>		<i>clumped acres</i>	<i>net</i>
Unit 1	62	12	0	0	50	5	45
Unit 2	70	24	0	1	45	4	41
Unit 3	13	5	0	0	8	1	7
Totals	145	41	0	1	103	10	93

- b. *Timber stand description pre-harvest (include major timber species and origin date), type of harvest, overall unit objectives.*

Type of Harvest:

This proposal involves the variable retention harvest of 93 acres.

Overall Unit Objective:

The overall objectives for these forest management units includes generating a new stand and revenue for the Trusts through the production of saw logs, poles, and pulp material while manipulating the stand to maintain wildlife habitat.

Pre-harvest Stand Description:

Unit	Age	Species Composition
1	65-68-years-old	Overstory: Douglas-fir, western hemlock, western redcedar, red alder and bigleaf maple. Understory: sword fern, huckleberry, Oregon oxalis, vine maple, hazel, red elderberry, devil's club, salal, Oregon grape and salmonberry.
2	68-years-old	Overstory: Douglas-fir, western hemlock, western redcedar, red alder and bigleaf maple. Understory: sword fern, huckleberry, Oregon oxalis, vine maple, hazel, red elderberry, devil's club, salal, Oregon grape and salmonberry.
3	67-years-old	Overstory: Douglas-fir, western hemlock, western redcedar, red alder and bigleaf maple. Understory: sword fern, huckleberry, Oregon oxalis, vine maple, hazel, red elderberry, devil's club, salal, Oregon grape and salmonberry.

c. Road activity summary. See also forest practice application (FPA) for maps and more details.

Type of Activity	How Many	Length (feet) (Estimated)	Acres (Estimated)	Fish Barrier Removals (#)
Construction		3,776	5	
Reconstruction		0		
Abandonment		0	0	
Bridge Install/Replace	0			
Culvert Install/Replace (fish)	0			
Culvert Install/Replace (no fish)	1			

12. Location of proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist. (See timber sale map available at DNR region office, and/or color landscape/WAU map on the DNR website <http://www.dnr.wa.gov> under "SEPA Center.")

a. Legal description:

Section 7 Township 16 North, Range 03 West, W.M.
Section 22 Township 16 North, Range 04 West, W.M.

b. Distance and direction from nearest town (include road names):

The proposed units are located approximately 5 miles Northwest of Littlerock; following Maytown road, 128th Ave., Mima Road, Bordeaux Road, E-line, (Unit 1) E-Line, 6800; (Unit 2) E-line and (Unit 3) E-Line, E-6000, E-6200.

c. Identify the watershed administrative unit (WAU), the WAU Sub-basin(s), and acres. (See also landscape/WAU map on DNR website <http://www.dnr.wa.gov> under "SEPA Center.")

WAU Name	WAU Acres	Proposal Acres
WADDEL CREEK	24322	145
Sub-basin #	Sub-basin Acres	Proposal Acres
5	1,523	6
6	1,437	139

13. Discuss any known future activities not associated with this proposal that may result in a cumulative change in the environment when combined with the past and current proposal(s). (See digital ortho-photos for WAU and adjacency maps on DNR website <http://www.dnr.wa.gov> under "SEPA Center" for a broader landscape perspective.)

This proposal is located within the Waddel Creek WAU in the DNR's Capital State Forest. Approximately 77% of the WAU is managed forestland with the remaining 23% consisting of a mix of farmland and residential areas. Residential development in the Waddle Creek WAU appears to be occurring at a slower pace than that which is occurring in neighboring WAU's further to the east.

This proposal is not located in the general vicinity of a Cultural Resource. In the event that any unknown archaeological resources are encountered, ground disturbing activities would be halted and the DNR Archaeologist contacted. This proposal should have a minimal cumulative effect on Cultural Resources.

This proposal will have an impact on the aesthetics in the general vicinity. It will change from a stand of mature timber to a recent harvest with RMZ's adjacent to the type 3 streams and scattered leave trees throughout. This proposal is consistent with the land usage of 77% of the WAU. It should have minimal cumulative effect on aesthetics.

This proposal is located within the range of potential Bull Trout habitat. However, Bull Trout habitat is protected under the Department of Natural Resources HCP's Riparian Strategies. This proposal should have a minimal cumulative effect on the Bull Trout habitat.

There is a less than ¼ acre wetland located within this proposal. Under the HCP the size of the wetland does not receive a wetland management zone, however a leave tree clump was placed around it. This proposal should have a minimal cumulative effect on the wetlands.

Forestland ownership includes large industrial forests, tribal lands, small private forests, and DNR managed forests. Forest stands within the WAU appear to be almost exclusively second and third growth stands. The number of Forest Practices shown on the WAU map (referenced above on the DNR website) along with observations within the WAU indicates that timber

stands are intensively managed on relatively short rotations. Management includes regeneration harvests, thinnings, and partial cuts similar to this proposal.

The following table is an estimated summary of past and future activity on DNR-managed land and privately-managed land in the WAU (information is based off of Forest Practices applications that have been approved in the last seven years compiled by the Department's GIS database). No attempt was made to predict future timber harvest on private ownerships within the WAU. The source of this information only provided the acreage on the WAU level. This information is derived from activity locations collected by varying methods ranging from hand drawn maps to precise GPS collection. No verification of map accuracy or activity completion is conducted. Totals may not be the sum of all harvest types due to overlapping activities. The same land may be counted more than once if, in the past seven years, more than one Forest Practice application has been approved for different harvests (salvage and even age for example).

NOTE: All acreages are approximate. Rounding to the nearest 10 or even to the nearest 50 acres may be appropriate. Totals may not be the sum of all harvest types due to overlapping activities. Proposed future acres are uncertain. The acreages on DNR land represent a likely harvest strategy for the remainder of the current fiscal year.

Waddell Creek WAU	WAU ACRES/SUB-BASIN ACRES	ACRES OF EVEN-AGED HARVEST WITHIN THE LAST SEVEN YEARS	ACRES OF UNEVEN-AGED HARVEST WITHIN THE LAST SEVEN YEARS	PROPOSED ACRES OF EVEN-AGED HARVEST IN THE FUTURE	PROPOSED ACRES OF UNEVEN-AGED HARVEST IN THE FUTURE
DNR MANAGED LAND	18,633	2,273	656	522 (estimated)	0
OTHER STATE (NON-DNR)	82	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN
PRIVATE OWNERSHIP	5,607	367	134	UNKNOWN	UNKNOWN
TOTAL	24,322	2,640	790	522 (estimated)	UNKNOWN

Waddell Creek Sub-basin 5 and 6 These sub-basins are composed of 2,960 acres. In these sub-basins the closest regeneration harvest to Unit #1 is a 21-acre plantation of 4 year old reproduction adjacent to the unit to the northeast; Unit #2 has a 30-acre plantation of 7 year old reproduction adjacent to the unit to the east.; Unit #3 has a 46-acre plantation of 5 year old reproduction adjacent to the unit to the northwest. Additional stands within the WAU will be selected for regeneration, thinning, and partial cut harvests in the future.

In addition: Normally, there are few significant changes associated with peak flows in the WAU or sub-basins. However, in the winters of 2007 and 2009, two 100-year plus events occurred. The rainstorm set rainfall and flood level records in Southwest Washington. The event caused many shallow mass-wasting events. Many stream channels were altered in this event due to extremely high stream flows with accompanying sediment loads and possibly large woody debris delivery. The full extent of this is not known.

To reduce the possibility that this proposal may contribute to an increased chance of environmental impact, several mitigative measures will be included in this proposal. Haul routes for this proposal have been evaluated for potential impact to the environment. To assure runoff from roads and sediment delivery is controlled during the hauling of forest products, multiple cross drains, sediment ponds, and other structures or methods will be used to disconnect ditch water from streams. Proposed roads will be located and designed to avoid diversion and concentration of runoff and discharge onto or above potentially unstable slopes. Ditch water will be dispersed onto the forest floor in stable areas for filtering prior to entering watercourses. New road construction will be concentrated on stable ridge top locations and engineered to a higher standard than road construction in the past. To ensure soil protection, soils exposed during road construction will be seeded with grass and/or straw will be applied and where necessary, other restoration measures may be applied to stabilize soils and enhance vegetation growth.

Furthermore, to provide structural diversity for wildlife habitat, maintain fish habitat, and limit possible effects to aesthetic appearances, individual leave trees and leave tree clumps have been identified for retention throughout the proposal. RMZs will be maintained along type 3 streams. The RMZs will help reduce potential sedimentation, provide a source of large woody debris (LWD) to streams, maintain shade, reduce the aesthetic impact, and provide habitat for wildlife. Wildlife reserve and legacy trees will be retained throughout the proposal to provide structural diversity for wildlife habitat. In addition, these stands will be managed to maintain site productivity and water quality of adjacent streams.

Logging operations will be conducted in such a manner as to avoid severe ground disturbance. RMZ's, leave trees and the 30-foot Equipment Limitation Zone on the type 5 streams will help limit ground disturbance, provide filtration, and protect stream integrity. Slope stability or soil erosion will impact water quality. Operations shall be suspended and sediment control devices required, when necessary, to minimize sediment delivery to streams. The units will be planted upon completion of logging. Ground tracked yarding may be suspended during saturated soil conditions, to prevent soil damage and erosion. RMZ's will be left to protect water quality, maintain stream integrity, and maintain slope stability, on all type 3 streams (see B.3.a.1.b.).

B. ENVIRONMENTAL ELEMENTS

1. Earth

- a. General description of the site (check one):

☒Flat, ☐Rolling, ☐Hilly, ☐Steep Slopes, ☐Mountainous, ☐Other:

1) General description of the WAU or sub-basin(s) (landforms, climate, elevations, and forest vegetation zone).

The Waddell Creek WAU generally consists of hilly topography with moderate to steep slopes. Elevations range from 80 to 2656 ft. The majority of the WAU's acreage is in DNR managed forestlands, the remainder consists of a mix of private forestland, farmland, residential and recreational areas. The WAU receives approximately 45 to 60 inches of precipitation annually, with a weighted average of 52

inches/year. The majority of the precipitation in the area falls as rain with only 5.1% of the WAU identified as in a Rain on Snow Zone. Approximately 46% of the slopes in the WAU are under 30%, 11% of the slopes are between 31% and 65%, and 43% are over 65%. The WAU falls within the western hemlock zone, primary timber type is Douglas-fir, with secondary species including western redcedar, bigleaf maple and western hemlock.

- 2) Identify any difference between the proposal location and the general description of the WAU or sub-basin(s).

The vicinity of the proposal matches the general description of the WAU or sub-basins. However, the majority of the proposal is located on slopes that are generally flat (less than 20% slopes) to hilly (greater than 20% slopes).

- b. What is the steepest slope on the site (approximate percent slope)?

Unit	Steepest Slope
1	40%
2	65% (for pitches <100')
3	40%

Ground base short pitches at these slopes

- c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any prime farmland. *Note: The following table is created from state soil survey data. It is a roll-up of general soils information for the soils found in the entire sale area. It is only one of several site assessment tools used in conjunction with actual site inspections for slope stability concerns or erosion potential. It can help indicate potential for shallow, rapid soil movement, but often does not represent deeper soil sub-strata. The actual soils conditions in the sale area may vary considerably based on land-form shapes, presence of erosive situations, and other factors. The state soil survey is a compilation of various surveys with different standards.*

State Soil Survey #	Soil Texture or Soil Complex Name	% Slope	Acres	Mass Wasting Potential	Erosion Potential
5689	SILT LOAM	20-40	86	Low	Medium
0657	GRAVELLY SILT LOAM	30-65	2	Medium	High
0578	SILT LOAM	20-40	15	Low	Medium

- d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

- 1) Surface indications:

Surface indicators such as dry site vegetation and mature, straight conifer trees show the area to be stable.

- 2) Is there evidence of natural slope failures in the sub-basin(s)?

☐ No ☒ Yes, type of failures (shallow vs. deep-seated) and failure site characteristics:

There are indicators of shallow slope failures in several places in the sub-basin. These are generally associated with slopes greater than 65% found most commonly within the RMZs, along the toe slopes of the main draws, within hollows that extend as far up as mid-slope, and/or within headwalls at the top of the steeper draws.

- 3) Are there slope failures in the sub-basin(s) associated with timber harvest activities or roads?

☐ No ☒ Yes, type of failures (shallow vs. deep-seated) and failure site characteristics:

Associated management activity:

Within the sub-basin, some shallow-rapid side cast failures associated with roads have occurred, mostly where roads were constructed prior to the Forest Practices Act and where roads utilizing sidecast construction techniques are located mid-slope on steep sideslopes.

- 4) Is the proposed site similar to sites where slope failures have occurred previously in the sub-basin(s)?

☒ No ☐ Yes, describe similarities between the conditions and activities on these sites:

- 5) Describe any slope stability protection measures (including sale boundary location, road, and harvest system decisions) incorporated into this proposal.

RMZs along the type 3 streams and equipment limitation zones along type 5 streams protect the steeper slopes that are generally found adjacent to streams. Roads will be crowned, ditched and cross-drained. Ground tracked yarding may be seasonally restricted to slopes less than 35%. Most road construction is located on or near ridge tops to avoid impacting slopes.

- e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.
Approx. acreage new roads: 2 Approx. acreage new landings: <1 Fill source: Native material

- f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

Incidental erosion may occur resulting from the harvesting of logs and the soils that are exposed during and after road construction.

- g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)? Approximate percent of proposal in permanent road running surface (includes gravel roads):

Less than 1% of the proposal area will be covered with impervious surfaces after completion.

- h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:
(Include protection measures for minimizing compaction or rutting.)

Measures to reduce erosion on roads or during active road construction:

- Roads will be out-sloped or crowned, ditched and cross-drained.
- Soils exposed during road construction may be grass seeded.
- Seasonal timing restrictions will prohibit road construction during wet weather conditions.
- Cross-drains will be installed and maintained.
- Sediment delivery will be addressed as needed during operations with the use of water bars or silt traps.
- There will be periodic maintenance and inspection of the road system to insure proper drainage.
- Road locations were specifically designed to avoid potentially unstable areas and water crossings.

Protection measures to reduce erosion associated with active logging operation:

- Ground-based yarding will be restricted to slopes less than 35%.
- The lead end of all logs will be suspended during all yarding operations.
- Tracked skidders will be allowed only during the months when dry soil conditions permit.
- Type 3 streams will be protected with RMZ's. Falling and bucking may take place in or over type 5 streams. Logs may be yarded across the streams. The 30-foot equipment limitation zone will be observed. Water bars or other mitigation measures will be installed if greater than 10% of the soil is exposed within the zone.
- Most type 5 streams were protected with "Leave Tree Clumps".
- Yarding will be directed away from RMZ boundaries.

2. Air

- a. What types of emissions to the air would result from the proposal (i.e., dust from truck traffic, rock mining, crushing or hauling, automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.

Minor amounts of engine exhaust from logging and road construction equipment and dust from vehicle traffic on roads will be emitted. If landing debris is burned after harvest is completed, wood smoke will be generated. There will be no emissions once the proposal is complete.

- b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

No.

- c. Proposed measures to reduce or control emissions or other impacts to air, if any:

If landing debris is burned, it will be in accordance with Washington State's Smoke Management Plan. A burn permit will be obtained before burning occurs.

3. Water

- a. Surface:

- 1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into. (See timber sale map available at DNR region office, or forest practice application base maps.)

Yes. This proposal has 6 type 3 streams and 6 type 5 streams on or within the immediate vicinity of the site.

- a) *Downstream water bodies:*

Streams associated with this proposal are tributary to Mima Creek which flows into Black River which flows directly into the Chehalis River.

- b) *Complete the following riparian & wetland management zone table:*

Wetland, Stream, Lake, Pond, or Saltwater Name (if any)	Water Type	Number (how many?)	Avg RMZ/WMZ Width in Feet (per side for streams)
Stream	3	6	192
Stream	5	6	NA
Wetland	>0.25 acres	1	NA

- c) *List RMZ/WMZ protection measures including silvicultural prescriptions, road-related RMZ/WMZ protection measures, and wind buffers.*

RMZs for this proposal were designed in accordance with the Department's HCP procedures and identified by channel width characteristics. Local knowledge of prevailing wind direction and observation of standing trees in nearby RMZs in recently harvested units determined no wind buffers were necessary within the type 3 RMZ buffers. A leave tree clump was place around one forested wetland less than 0.25 acre.

- 2) Will the project require any work over, in, or adjacent to (within 200 feet) to the described waters? If yes, please describe and attach available plans.

☐ No ☒ Yes (See RMZ/WMZ table above and timber sale map available at DNR region office.)

Description (include culverts):

Falling and bucking may take place in or over type 5 streams. Logs may be yarded across the streams. The 30-foot equipment limitation zone will be observed. Water bars or other mitigation measures will be installed if greater than 10% of the soil is exposed within the zone. A culvert replacement on one type 5 stream located in Unit 1 may be completed with this proposal.

- 3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

None.

- 4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known. *(Include diversions for fish-passage culvert installation.)*
☒ No ☐ Yes, description:
- 5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.
☐ No ☒ Yes, describe location:

Most portions of 100-year floodplains are located within type 3 RMZs with one culvert replacement on a type 5 stream.

- 6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.
☒ No ☐ Yes, type and volume:
- 7) Does the sub-basin contain soils or terrain susceptible to surface erosion and/or mass wasting? What is the potential for eroded material to enter surface water?

Generally, the high potential areas associated with erosion or mass wasting are located on convergent slopes of 65% or greater and often involve unstable soils and/or steep head walls. Some past failures have entered streams in small amounts. With the mitigating measures to be implemented, this proposal is not expected to contribute material to surface waters. See questions B.1.c, B.1.d, B.1.f, B.1.h, and B.3.9.

- 8) Is there evidence of changes to the channels in the WAU and sub-basin(s) due to surface erosion or mass wasting (accelerated aggradations, erosion, decrease in large organic debris (LOD), change in channel dimensions)?
☐ No ☒ Yes, describe changes and possible causes:

Normally, there are few significant changes associated with peak flows in the WAU or sub-basins. However, in the winters of 2007 and 2009, two 100-year plus events occurred. The rainstorm set rainfall and flood level records in Southwest Washington. The event caused many shallow mass-wasting events. Many stream channels were altered in this event due to extremely high stream flows with accompanying sediment loads and possibly large woody debris delivery. The full extent of this is not known.

- 9) Could this proposal affect water quality based on the answers to the questions 1-8 above?
☐ No ☒ Yes, explain:

This proposal could possibly introduce minor amounts of sediment into the streams adjacent to the proposal area as a result of road building and harvest operations during early stages of activity. The erosion control measures and operation procedures outlined in B.1.f and B.1.h are expected to minimize the chances of any sediment delivery.

- 10) What are the approximate road miles per square mile in the WAU and sub-basin(s)?
Are you aware of areas where forest roads or road ditches intercept sub-surface flow and deliver surface water to streams, rather than back to the forest floor?
☒ No ☐ Yes, describe:

WAU	Road Miles/ Miles ²
Waddel Creek	3.3

Road mileages for sub-basins 5 and 6 Waddel Creek WAU are unknown.

- 11) Is the proposal within a significant rain-on-snow (ROS) zone? If not, **STOP HERE** and go to question B-3-a-13 below. Use the WAU or sub-basin(s) for the ROS percentage questions below.
☒ No ☐ Yes, approximate percent of WAU in significant ROS zone.
Approximate percent of sub-basin(s):
- 12) If the proposal is within the significant ROS zone, what is the approximate percentage of the WAU or sub-basin(s) within the significant ROS zone (all ownerships) that is (are) rated as hydrologically mature?
- 13) Is there evidence of changes to channels associated with peak flows in the WAU or sub-basin(s)?
☐ No ☒ Yes, describe observations:

See question B.3.a.8 Above.

- 14) Based on your answers to questions B-3-a-10 through B-3-a-13 above, describe whether and how this proposal, in combination with other past, current, or reasonably foreseeable proposals in the WAU and sub-basin(s), may contribute to a peak flow impact.

Past, current, or reasonably foreseeable proposals may slightly change the timing, duration, and/or amount of peak flow, and flow rates may increase slightly during low flow periods due to decreased transpiration and interception. However, the unit size, RMZs and green-up policies should limit contributions to peak flow problems. See question B.3.a.16 below.

- 15) Is there water resource (public, domestic, agricultural, hatchery, etc.), or area of slope instability, downstream or downslope of the proposed activity that could be affected by changes in surface water amounts, quality, or movements as a result of this proposal?
☐ No ☒ Yes, possible impacts:

The Department of Ecology lists water rights for an unnamed spring in Section 8 of Township 16N Range 03 West. Changes in turbidity or volume and duration of water delivered down stream could affect users, however due to mitigation measures that will be applied this proposal will likely have minimal affects on the mentioned resources.

16) Based on your answers to questions B-3-a-10 through B-3-a-15 above, note any protection measures addressing possible peak flow/flooding impacts.

- The RMZ buffers described in question B.3.a.1.c above.
- Most type 5 streams have been protected with leave trees where they were not protected within the type 3 RMZ buffer.
- Two roads were designed to be built on ridgetops away from live water.
- Forested wetlands less than 0.25 acres have been protected with leave trees.
- Timber will be felled and yarded away from all streams.
- There will be a 30-foot Equipment Limitation Zone associated with all type 5 streams.
- Any slash that enters a stream will be cleaned out per contract requirements.
- Cross-drains will be installed and maintained.
- Sediment delivery will be addressed as needed during operations and may include the use of water bars, silt traps, and water course diversions during and culvert installation.
- There will be periodic maintenance and inspection of the road system to insure proper drainage.

b. Ground Water:

- 1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known.

Relief culvert drainage may increase ground water recharge directly below culvert outlets.

- 2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

Minor amounts of oil, fuel, and other lubricants may inadvertently be discharged to the ground as a result of heavy equipment use or mechanical failure. No lubricants will be disposed of on-site. This proposed activity is expected to have no impact on ground water.

- 3) Is there a water resource use (public, domestic, agricultural, hatchery, etc.), or area of slope instability, downstream or down slope of the proposed activity that could be affected by changes in groundwater amounts, timing, or movements as a result this proposal?

☒ No ☐ Yes, describe:

a) Note protection measures, if any.

No specific protection measures were incorporated into this proposal to protect these resources beyond those described in B.1.d.5., and B.3.a.1.c.

c. Water Runoff (including storm water):

- 1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

Storm water runoff from roads and intercepted sub-surface flow will be collected by road ditches and ditch-outs and diverted onto the forest floor. Ditch-outs and cross-drain culverts will be placed to minimize the amount of ditch water directly entering existing stream channels

- 2) Could waste materials enter ground or surface waters? If so, generally describe.

There is potential for logging slash to enter any of the type 3 and 5 streams. Insignificant amounts of oil and other lubricants could be inadvertently discharged as a result of heavy equipment use; however, the potential to deliver oil and lubricants to a stream is low.

a) Note protection measures, if any.

Slash may be removed from flowing streams at the direction of the Contract Administrator and as required by the HPA. The potential for waste materials to enter surface water is minimal because equipment operations are limited to areas 192 feet from type 3 streams and 30 feet from the type 5 stream. Leave tree concentrations in and around type 5 streams will further reduce equipment operations in areas with potential to impact ground or surface water.

Any spill that may be a threat to human health or the environment shall be reported immediately to the Department of Ecology and the Contract Administrator. Other spills shall be reported to the Contract Administrator. All spills are required to be contained and cleaned-up. Fuel tanks and other containers of hazardous materials shall be managed to prevent any drips, leaks or larger spills. Equipment seals, pressure lines, and other potential leak sources shall be maintained in good working condition to eliminate oil, hydraulic fluid, and other leaks.

Equipment maintenance activities, such as oil changes, shall be undertaken so that no oil or other hazardous materials reach the ground. Filters, batteries, and other equipment waste shall be deposited in barrels or otherwise temporarily stored to prevent the leaking of oil, acid, or other hazardous liquids onto the ground.

d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:

See surface water, ground water, and water runoff sections above, questions B-3-a-1-c, B-3-a-16, B-3-b-3-a, and B-3-c-2-a.

4. Plants

- a. Check or circle types of vegetation found on the site:
- ☒deciduous tree: ☒alder, ☒maple, ☐aspen, ☐cottonwood, ☐western larch, ☐birch, ☐other:
☒evergreen tree: ☒Douglas fir, ☒grand fir, ☐Pacific silver fir, ☐ponderosa pine, ☐lodgepole pine,
☐western hemlock, ☐mountain hemlock, ☐Englemann spruce, ☐Sitka spruce,
☐red cedar, ☐yellow cedar, ☐other:
☒shrubs: ☒huckleberry, ☒salmonberry, ☒salal, ☒other: Oregon grape, hazel and vine maple
☒grass
☐pasture
☐crop or grain
☒wet soil plants: ☐cattail, ☐buttercup, ☐bullrush, ☒skunk cabbage, ☒devil's club, ☐other:
☐water plants: ☐water lily, ☐eelgrass, ☐milfoil, ☐other:
☒other types of vegetation: **Sword Fern**
☐plant communities of concern:
- b. What kind and amount of vegetation will be removed or altered? (See answers to questions A-11-a, A-11-b, B-3-a-1-b and B-3-a-1-c. The following sub-questions merely supplement those answers.)

All conifer and hardwood trees, except the wildlife leave trees, green recruitment trees and the vegetation within the RMZs will be removed as part of this harvest proposal. Under story vegetation will be disturbed and/or reduced within the proposed harvest area as a result of timber felling, bucking, yarding and site prep operations. Most of the vegetation will re-establish after the harvest is completed.

- 1) Describe the species, age, and structural diversity of the timber types immediately adjacent to the removal area. (See landscape/WAU and adjacency maps on the DNR website at: <http://www.dnr.wa.gov> under "SEPA Center.")

Unit 1	Age and Species
northwest	Douglas-fir 5 years old
northeast	Douglas-fir 21 years old
southeast	Douglas-fir 68 years old
southwest	Douglas-fir 5 years old

Unit 2	Age and Species
northwest	Douglas-fir 5 years old
northeast	Douglas-fir 68 years old
southeast	Douglas-fir 65 years old
southwest	Douglas-fir 74-84 years old

Unit 3	Age and Species
northwest	Douglas-fir 65 years old
northeast	Douglas-fir 7 years old
southeast	Douglas-fir 21 years old
southwest	Douglas-fir 65 years old

The 5-21 year old stands are planted with homogenous Douglas-fir. The 65-84 year old stands are primary homogenous stands of Douglas-fir with scattered bigleaf maple and red alder. The structural diversity in the 65-84 year old stands consists of mature Douglas-fir in the dominant canopy positions with occasional hemlock and western red cedar occupying co-dominant, overtopped or suppressed canopy positions. In some wetter areas such as streamsides, red alder holds dominant and co-dominant canopy positions.

- 2) Retention tree plan:

Unit	Distribution Method for Retention Trees and Snags	Acres in Clumps	Total Trees Left
1	Clumps	5	400
2	Clumps	4	360
3	Clumps	1	64
	Total Leave Tree Acres	10	824

A combination of Douglas-fir, western redcedar, western hemlock, bigleaf maple and red alder were left for green tree retention and snag recruitment. Reserve tree numbers were based on leaving eight trees per acre. In the proposal, a minimum of 824 trees were left. Trees were left in clumps and as scattered individuals. This type of leave tree pattern will be conducive to a safe harvest operation, additionally it will distribute habitat throughout the proposal. Wildlife trees were left in areas to protect snags, large down logs, advanced regeneration and structurally unique trees as well as large legacy trees. Trees with features such as split or broken tops, dominant crowns, large diameters and large limbs were favored as leave trees to enhance wildlife potential. Individual trees or clumps within the sale area may be relocated to facilitate safety and/or operational needs.

- c. List threatened or endangered plant species known to be on or near the site.
- None found in database search.
- d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

RMZs along type 3 streams along with individual and clumped leave trees will preserve native vegetation and serve as a seed source for reestablishing forest vegetation. Within two years after harvest the site will be hand planted with conifer seedlings which will subsequently be surveyed and treated until they are free to grow from brush/woody plant competition.

5. Animal

- a. Circle or check any birds animals *or unique habitats* which have been observed on or near the site or are known to be on or near the site:
- birds: ☒hawk, ☒heron, ☒eagle, ☐songbirds, ☐pigeon, ☒other: **grouse**
mammals: ☒deer, ☒bear, ☒elk, ☒beaver, ☒other: **bobcat, coyote**
fish: ☐bass, ☐salmon, ☒trout, ☐herring, ☐shellfish, ☐other:
unique habitats: ☐talus slopes, ☐caves, ☐cliffs, ☐oak woodlands, ☐balds, ☐mineral springs
- b. List any threatened or endangered species known to be on or near the site (*include federal- and state-listed species*).

TSU Number	FMU_ID	Common Name	Federal Listing Status	WA State Listing Status
None Found in Database Search				

This proposal is located within the range of potential Bull Trout habitat.

- c. Is the site part of a migration route? If so, explain.
☒Pacific flyway ☐Other migration route: *Explain if any boxes checked:*
- This proposal is located in the Pacific flyway. Migratory waterfowl use the Pacific flyway; the area for this proposal is not generally the type of area used for resting or feeding by migratory waterfowl. While migrating through Pacific Northwest forests, many Neotropical birds are closely associated with riparian areas, cliffs, snags, and structurally unique trees. Riparian areas and special habitats are protected through implementation of DNR’s Habitat Conservation Plan.**
- d. Proposed measures to preserve or enhance wildlife, if any:
- By designing this sale to comply with the State’s HCP, wildlife and wildlife habitat will be preserved and enhanced. The small unit design is conducive to ungulate feeding patterns. Scattered leave tree clumps are favorable to raptor perching, feeding and nesting. Well engineered and built roads reduce potential water quality impacts for down stream fish populations. Grass seeding exposed soils should protect water quality and provide forage. Large diameter leave trees will enhance wildlife habitat value of the future stand. RMZs along type 3 streams will protect water quality; provide corridors for wildlife; and maintain habitat for fish (including potential Bull Trout habitat), amphibians, and other riparian obligate species.**

6. Energy and Natural Resources

- a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project’s energy needs? Describe whether it will be used for heating, manufacturing, etc.
- None.**
- b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.
- No.**
- c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:
- None.**

7. Environmental Health

- a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.
- There is a minimal hazard incidental to operating heavy equipment. There is the possibility of fire ignition during the operating period, especially during fire season.**
- 1) Describe special emergency services that might be required.
- Fire suppression resources will be from DNR. Other emergencies (health, chemical spills) will be addressed by appropriate agencies. In the event of a lubricant spill the purchaser will contact the Department of Natural Resources and the Departement of Ecology.**
- 2) Proposed measures to reduce or control environmental health hazards, if any:
- No oil or lubricants will be disposed of on site. In the event of a lubricant spill the purchaser will contact the Department of Natural Resources and the Departement of Ecology. Fire tools and equipment will be kept on site during fire season. The cessation of operations may occur during periods when the risk of fire is unacceptably high.**
- b. Noise
- 1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

None.

- 2) What types and levels of noise would be created by or associated with the project on a short-term or long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from this site.

Minimal noise levels associated with logging operations and truck traffic. This traffic is consistent with the existing traffic. Noise will be increased on site during daylight hours, while operations are being conducted. No long-term impacts are anticipated.

- 3) Proposed measures to reduce or control noise impacts, if any:

None.

8. Land and Shoreline Use

- a. What is the current use of the site and adjacent properties? *(Site includes the complete proposal, e.g. rock pits and access roads.)*

Forest land management.

- b. Has the site been used for agriculture? If so, describe.

No.

- c. Describe any structures on the site.

None.

- d. Will any structures be demolished? If so, what?

No.

- e. What is the current zoning classification of the site?

Forest land.

- f. What is the current comprehensive plan designation of the site?

Forest land.

- g. If applicable, what is the current shoreline master program designation of the site?

N/A

- h. Has any part of the site been classified as an "environmentally sensitive" area? If so, specify.

No.

- i. Approximately how many people would reside or work in the completed project?

None.

- j. Approximately how many people would the completed project displace?

None.

- k. Proposed measures to avoid or reduce displacement impacts, if any:

None.

- l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

This proposal is consistent with the designated forestland classification.

9. Housing

- a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

None.

- b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

None.

- c. Proposed measures to reduce or control housing impacts, if any:

None.

10. Aesthetics

- a. What is the tallest height of any proposed structure(s), not including antennas; what is the principle exterior building material(s) proposed?

None.

- b. What views in the immediate vicinity would be altered or obstructed?

None.

- 1) *Is this proposal visible from a residential area, town, city, developed recreation site, or a scenic vista?*
☒ No ☐ Yes, viewing location:
- 2) *Is this proposal visible from a major transportation or designated scenic corridor (county road, state or interstate highway, US route, river, or Columbia Gorge SMA)?*
☒ No ☐ Yes, scenic corridor name:
- 3) *How will this proposal affect any views described in 1) or 2) above?*

N/A

- c. Proposed measures to reduce or control aesthetic impacts, if any:

Any aesthetic impacts will be mitigated by leaving a total of 832 leave trees clumped and scattered throughout the units and by retaining RMZs averaging 192 feet wide along type 3 streams associated with this proposal.

11. Light and Glare

- a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

None.

- b. Could light or glare from the finished project be a safety hazard or interfere with views?

No.

- c. What existing off-site sources of light or glare may affect your proposal?

None.

- d. Proposed measures to reduce or control light and glare impacts, if any:

None.

12. Recreation

- a. What designated and informal recreational opportunities are in the immediate vicinity?

Informal recreational opportunities such as hunting, berry picking, and sightseeing.

- b. Would the proposed project displace any existing recreational uses? If so, describe:

Informal recreational opportunities such as hunting, berry picking, and sightseeing will be temporarily displaced during logging operations.

- c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

None.

13. Historic and Cultural Preservation

- a. Are there any places or objects listed on, or proposed for national, state, or local preservation registers known to be on or next to the site? If so, generally describe.

None.

- b. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.

None.

- c. Proposed measures to reduce or control impacts, if any:
(Include all meetings or consultations with tribes, archaeologists, anthropologists or other authorities.)

This proposal was screened for potential archeological sites or artifacts using the P&T special concerns report, historical topographic and GLO maps during the pre-sales phase. In the event that any unknown archaeological resources are encountered, ground disturbing activities would be halted and the DNR Archaeologist contacted.

14. Transportation

- a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.

Interstate-5, Little Rock Rd, 128th Ave. and Mima road.

- 1) *Is it likely that this proposal will contribute to an existing safety, noise, dust, maintenance, or other transportation impact problem(s)?*

Traffic from this operation will marginally increase noise, dust, and vehicle density, which may temporarily result in a decrease in safety. Contractual clauses require the operator to use existing safety

standards. Truck traffic from this individual operation should not increase the need for public road maintenance.

- b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?

No.

- c. How many parking spaces would the completed project have? How many would the project eliminate?

None.

- d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private).

See question A.11.c. for details.

- 1) *How does this proposal impact the overall transportation system/circulation in the surrounding area, if at all?*

This proposal does not significantly affect the current transportation system or traffic circulation. The proposal will increase access the Department of Natural Resources network.

- e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

No.

- f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.

During operations, approximately fifteen log truck trips per day will be generated and 2 to 4 administrative trips per week will be generated until the completion of timber harvest. Upon completion of the proposal, some vehicle trips will be required for reforestation of the area and to maintain the roads and newly established plantation. Recreational vehicle traffic may increase.

- g. Proposed measures to reduce or control transportation impacts, if any:

None.

15. Public Services

- a. Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.

No.

- b. Proposed measures to reduce or control direct impacts on public services, if any.

None.

16. Utilities

- a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.

None.

- b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

None.

C. SIGNATURE

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Completed by: DD Derwood D. Duncan III USF Forestier 1 PSF Date: May 20th, 2009
Title
Reviewed by: Marcus A. Johnson Prod. Sales. Mgr. Date: 11/21/09
Title
Comments: _____